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10/666,069	09/19/2003	Neil Gilmartin	030206 (BLL-0109)	7662

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EXAMINER	
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2109	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/666,069	GILMARTIN, NEIL	
	Examiner	Art Unit	
	Jason Recek	2109	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *9/19/2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☒ Claim(s) *1, 6-8, 11-13, 16, 18-19, 22- 23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/4/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is in response to the application filed on September 19th 2003 in which claims 1-23 are presented for examination.

Status of Claims

Claims 1-23 are pending, of which claims 1, 19 and 23 are in independent form.

Claims 1, 6-8, 11-13, 16, 18-19 and 22-23 are currently objected to.

Claims 1-23 are currently rejected.

Claim Objections

1. Claims 1, 19 and 23 are objected to because of the following informalities: lack of proper antecedent basis. The claims recite "the design". There is no antecedent basis for this limitation in this claim. Appropriate correction is required.

Claims 1, 8, 11, 18, 19, 22 and 23 are objected to because of the following informalities: the acronym "VLAN" is not defined. Appropriate correction is required.

Claims 6-7 are objected to under 37 CFR 1.75 as being substantial duplicates of claims 4-5. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). The additional words "in said class of

service" contained in claim 6 do not differentiate the two sets of claims because according to claim 1 a class of service is always present. Also, nowhere does claim 6 indicate that there is a bandwidth requirement associated with a class of service, only with the access ports.

Claims 12-13 are objected to under 37 CFR 1.75 as being substantial duplicates of claims 9-10. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). The additional words "in said class of service" contained in claim 12 do not differentiate the two sets of claims because according to claim 1 a class of service is always present. Also, nowhere does claim 12 indicate that there is a bandwidth requirement associated with a class of service, only with the access ports.

Claim 16 is objected to because of the following informalities: the term "said one or more access ports" does not have proper antecedent basis, replacing with the phrase "said two or more..." is one way to resolve the problem. Appropriate correction is required.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 23 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The term "computer program product" is software and software per se is non-statutory subject matter, it is neither a process nor machine nor composition nor article of manufacture.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The majority of the subject matter of claim 1 is directed to creating a VLAN "if said searching does not result in locating said VLAN". The claim becomes indefinite if said searching *does* result in locating said VLAN because the aspects of facilitating the design and assignment of Ethernet VLANs will not be realized. If the searching does result in locating the VLAN, only the steps of "receiving [...]; determining [...]; searching [...]" would be performed. These steps do not amount to facilitating the design of Ethernet VLANs. Therefore the claim is indefinite.

Claims 2-18 are rejected because they depend from claim 1 which is rejected.

3. Claims 19-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 attempts to claim a system and a method. According to MPEP 2173.05(p)(II) when a claim claims both an apparatus and a method of using the apparatus it is indefinite. Because claim 19 recites a system and a method of using that system it is indefinite.

Claims 20-22 are rejected because they depend from claim 19, which is rejected.

Claim 23 recites "a computer program product [...] comprising: a storage medium", the ordering of this language makes the claim indefinite. The term computer program product implies software, and software is unable to contain a physical medium. Normally, the physical medium will contain the software, not the other way around as claimed.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 16-17 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbins U.S. Pat. No. 5,684,800 in view of IEEE Standard 802.1q.

Regarding claim 1, Dobbins (800) discloses "receiving a VLAN name, [...] and two or more access ports" as a VLAN/Access Port table (see column 3, lines 4-5). Dobbins (800) also discloses "determining switches and trunks associated with said access ports" as a switched network and a protocol for discovering switches (see column 2, line 59 and column 4, lines 41-43). Dobbins (800) also discloses "searching a VLAN database for said VLAN" as a directory that contains VLAN-IDs and is capable of returning a list of IDs (see column 7, lines 7-11). Dobbins (800) further discloses "creating a VLAN if said searching does not result in locating said VLAN, wherein said creating includes: selecting a starting access port from said two or more access ports; mapping a base path from said starting access port to another of said access ports, wherein said base path includes one or more of said switches and one or more of said trunks" as a call processor that allows a system to update its mappings when a source-destination pair is not found in the connection database (see column 5, lines 6-27 and fig. 5). Dobbins (800) also discloses "adding said base path to said VLAN including said starting access port and said another of said access ports" as a system that generally discovers and assigns VLANs by mapping end user systems and storing these in a database (see column 6, lines 3-12). Dobbins (800) discloses "mapping a new path

from said access port to one of said switches in said VLAN" as a process where a switch determines the path of switches and links to traverse and explicitly maps a connection for the source-destination (see column 4, lines 37-38). Dobbins (800) also discloses "adding said new path to said VLAN including said access port; and transmitting said VLAN to said VLAN database" as a system that updates a VLAN table (see columns 2-3, lines 65-5).

Dobbins (800) does not disclose "receiving [...] a class of service" however this is taught by the IEEE standard 802.1q as a quality of service or priority indicator. It would have been obvious to one of ordinary skill in the art to modify Dobbins (800) with the priority field taught by the IEEE standard 802.1q. The motivation is to comply with international standards.

Regarding claim 16, Dobbins (800) further discloses "receiving a hub switch and wherein each said one or more access ports are mapped to said hub switch" as a switched network where VLANs are established, such switches having access ports connected to end systems (see column 2, lines 59-62). The term "hub switch" is interpreted as 'ethernet switch' to avoid confusion arising from the fact that a hub and a switch are different devices, thus "hub switch" is disclosed by Dobbins' teaching of a 'switch'.

Regarding claim 17, the invention of Dobbins would necessarily include "wherein said trunks associated with said access ports include a relative cost value" due to the

way a switched network operates. When the network is being discovered the link state packets sent out will include 'costs' to each neighbor in the network, thus each line or trunk will include a relative cost value.

Regarding claim 19, Dobbins also discloses "a system for facilitating the design and assignment of Ethernet VLANs, the system comprising: a network of switches and connecting trunks" (see figs. 1,5) "a storage device in communication with said network, wherein said storage device includes a VLAN database" (see fig. 3, item 82) "a user system in communication with said network" (see fig. 5, items 20A-20L) "and a host system in communication with said network, said host system including application software to implement a method comprising: [the method of claim 1]" the host system is shown as a host agent (fig. 3, item 85) and software is also shown (fig. 3, items 87-89, also see column 4, lines 66-67).

Regarding claim 20, Dobbins (800) discloses "wherein said network is the Internet" as a system of networks and LANs that are globally connected to the Internet (see column 1, line 32).

Regarding claim 21, Dobbins (800) discloses "wherein said network is an intranet" as a switched network (see fig. 5).

Regarding claim 22, Dobbins (800) discloses "wherein said VLAN database is a relational database" as a connection database that has tables (see fig. 3, item 82, and figs. 6-7, and column 7, lines 1-30).

Regarding claim 23, Dobbins (800) discloses "a computer program product for facilitating the design and assignment of Ethernet VLANs, the computer program product comprising: a storage medium readable by a processing circuit and storing instructions for execution by the processing circuit for facilitating [the method of claim 1]" because the system and method of Dobbins (800) is designed to be run on a computer system which necessarily consists of computer readable media and a processor (see column 4, lines 21-23).

3. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbins (800) in view of IEEE 802.1q and further in view of Avargues et al. U.S. Pat. No. 6,104,701.

Dobbins (800) and IEEE 802.1q do not disclose "selecting a pre-selected number of said two or more access ports" however Avargues discloses this as a necessary step when determining a least cost routing path between end users, the users being equivalent to access ports (see abstract) and discloses "creating a list of least cost paths from said starting access port to each of said selected access ports, wherein each said path includes one or more of said switches and one or more of said trunks" as

broadcasting a query to determine paths to end node and monitoring answers to check for the best match (see column 4, lines 8-15). Finally, Avargues also discloses "selecting a longest length path from said list for said base path" as setting the network entry by choosing the longest prefix match between the two nodes (see column 4, lines 15-18).

It would have been obvious to one of ordinary skill in the art to modify the call processor of Dobbins (800) that maps paths to use the path selection process described in Avargues. The motivation to combine is simply to provide the best match when adding a link that is not already in the network or VLAN.

Regarding claim 3, the further limitation "wherein said pre-selected number is four" is in practice repeating the function of claim 2. Claim 2 discloses selecting at least 2 ports, in order to map a path *between* something you must have a beginning and an end. By choosing 4 locations, or ports, claim 3 is performing two iterations of the method described by claim 2, therefore claim 3 is rejected.

4. Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbins (800) in view of IEEE 802.1q and in view of Avargues and in further view of Gonda US2003/0067928 A1.

Neither Dobbins (800), IEEE 802.1q nor Avargues disclose "wherein each said two or more access ports includes a corresponding bandwidth requirement and said

mapping a base path further includes: determining if each said least cost path in said list has capacity for said bandwidth requirement corresponding to said another of said access ports;" however Gonda discloses this as a system for establishing Ethernet circuits, where circuits have a bandwidth requirement attribute and ports may be mapped similar to a VLAN (see paragraphs 53 and 62). Also the limitation "deleting a least cost path from said list in response to said least cost path not having capacity" would inherently be present in a system that required a path to meet a bandwidth requirement, if capacity was not present, the path would not be selected.

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the bandwidth requirement of Gonda with the inventions of Dobbins and Avargues. Motivation is establishing a minimal level of service.

Regarding claim 5, by disclosing a bandwidth requirement Gonda's invention also necessitates the need for path bandwidth capacity information to be provided from some sort of management system, thus "determining includes receiving capacity data from an operational support system" would have been inherent in Gonda's invention.

Regarding claims 6-7, see objection that they are a substantial duplicate of claims 4-5, since there no are distinguishing features, claims 6-7 are rejected under the same rationale.

5. Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbins (800) in view of Dobbins U.S. Pat. No. 5,825,772.

Dobbins (800) does not disclose "creating a list of one or more least cost paths from said access port to one of said switches located in said VLAN" however Dobbins (772) teaches this as connection mapping using a path determination algorithm (see column 13, lines 50-51). Dobbins (772) also discloses "selecting the shortest length path from said list for said new path, wherein if there is more than one shortest length path then selecting the one resulting in a lowest total hub value for the VLAN for said new path" as selecting a shortest path based on summation of link cost (see column 13, lines 52-54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Dobbins (800) with the shortest path selection algorithm from Dobbins (772). The motivation to combine is to choose efficient paths between access ports.

Regarding claim 11, Dobbins (772) also discloses "calculating a total bandwidth transport required by said list of least cost paths, wherein said total bandwidth transport required is said total hub value" as choosing a path based upon metrics, such as link cost (see column 13, lines 52-54). Link costs may include many factors, one of which is bandwidth, thus choosing based on hub value, which is calculated using bandwidth is another way of choosing a path based on link cost.

6. Claims 9-10, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbins (800) in view of Dobbins (772) and in further view of Gonda.

Dobbins (800) and Dobbins (772) do not disclose "wherein each said two or more access ports includes a corresponding bandwidth requirement and said mapping a new path further includes: determining if each said least cost path in said list has capacity for said bandwidth requirement corresponding to said access port;" however Gonda discloses this as a system for establishing Ethernet circuits, where circuits have a bandwidth requirement attribute and ports may be mapped similar to a VLAN (see paragraphs 53 and 62). Also the limitation "deleting a least cost path from said list in response to said least cost path not having capacity" would inherently be present in a system that required a path to meet a bandwidth requirement, if capacity was not present, the path would not be selected.

Regarding claim 10, the same reasoning used in the rejection of claim 5 is applied since claim 10 adds the same limitation as claim 5. The motivation to modify Dobbins (800) with Gonda has already been presented and the same motivation applies to the instant claims, see rejection of claims 4-5.

Regarding claims 12-13, see objection that they are a substantial duplicate of claims 9-10, since there no are distinguishing features, claims 12-13 are rejected under the same rationale.

7. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbins (800) in view of Avargues.

Dobbins (800) does not disclose using least cost paths, however Avargues teaches "wherein said [base/new] path is a least cost path" as a system for determining the best path by using a least cost path (see abstract). Least cost paths are well known in the art and it would have been obvious to one of ordinary skill in the art to modify Dobbins (800) with Avargues, the motivation is that least cost paths are often the best path.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dobbins (800) as applied to claim 1 above, and further in view of Zabihi et al. US2004/0042454 A1.

Dobbins (800) discloses a "VLAN database includes a VLAN name field, [...] VLAN switch fields and VLAN access port fields for each said VLAN" as a table which matches VLAN-IDs with access ports and is kept by a specific switch, or as a directory that maps VLANs to switches and ultimately end systems (see column 7, lines 7-15 and

figs. 6-7). Dobbins (800) does not disclose a database containing "VLAN trunk fields" however Zabihi teaches this as a network management database in a VLAN environment that associates trunk links with VLANs (see Fig. 3 and paragraph 63 in the detailed description).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the switch tables from Dobbins (800) with the more complete database taught by Zabihi. The motivation is to reduce overhead associated with developing and maintaining VLANs. A more comprehensive database will save a technician time by not having to manually select trunk lines.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dobbins et al. US Pat. 5,946,308 A.

Rijhsinghani, Anil G. US Pat. 6,112,251 A.

Dobbins et al. US Pat. 6,147,995 A.

Belser et al. US Pat. 6,151,324 A.

Kloth, Raymond US Pat. 6,208,649 B1.

Seaman, Michael John US 2003/0169694 A1.

Yip et al. US Pat. 6,914,905 B1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Recek whose telephone number is (571) 270-1975. The examiner can normally be reached on Mon - Thurs 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Coby can be reached on (571) 272-4017. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason Recek

5/31/07

FRANTZ COBY
PRIMARY EXAMINER